

Name: _____
PC: Solving Rational Equations Graphically

Date: _____
M

Warm Up:

Solve: $\frac{x+2}{3} = \frac{2x-4}{2}$

Steps to solving rational equations graphically:

1.

2.

3.

Solve each rational equation graphically:

- a) Sketch a complete graph of the function showing all intercepts and asymptotes
- b) Write the window settings you use on the calculator
- c) Find the solution set of the given equation (Round answers to 3 decimal places)

1) $\frac{x-1}{x+2} = 3$

$$2) \quad \frac{1}{x} - \frac{2}{x-3} = 4$$

$$3) \quad \frac{2}{x-1} + x = 5$$

$$4) \quad \frac{3}{x-1} + \frac{2}{x} = 8$$

$$5) \quad \frac{3x}{x+2} + \frac{2}{x-1} = \frac{5}{x^2+x-2}$$

$$6) \quad \frac{x-3}{x} - \frac{3}{x+1} + \frac{3}{x^2+x} = 0$$

Practice Exercises:

Solve each of the following graphically. Be sure to sketch a graph indicating any asymptotes and intercepts.

1. $\frac{4}{x} + \frac{1}{3x} = 9$

2. $\frac{3}{n+1} = \frac{5}{n-3}$

3. $\frac{2}{x+5} - \frac{3}{x-4} = \frac{6}{x}$

4. $\frac{1}{x-5} + \frac{1}{x-5} = \frac{4}{x^2-25}$

5. $\frac{6x^2+5x-11}{3x+2} = \frac{2x-5}{5}$

6. $\frac{3}{x-1} - \frac{4}{x-2} = \frac{2}{x+1}$

7. $\frac{x}{x^2-4x-12} = \frac{x+1}{6-x} - \frac{x-3}{2+x}$

8. $\frac{c+2}{c-5} = \frac{7}{c+2}$

9. $\frac{x^2-2x-3}{x^2-x-6} - \frac{x}{x+2} = \frac{5-x}{x-3}$